



Upper Snake Region Annual Fisheries Newsletter



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Welcome Interested Public!

We've put together this brief report highlighting many of the activities and accomplishments from the 2005 in an effort to keep people informed about activities of the Idaho Department of Fish and Game's fisheries program in the Upper Snake Region. Most importantly, it is our attempt to share what we've learned about the regions fisheries, because good management of a public re-

source comes from people staying informed and involved. One of the primary goals of the IDFG Strategic Plan is to improve public understanding and involvement in Fish and Wildlife Management. We hope this summary helps achieve that goal, and invite you to contact us at any time for further information or to share your comments.

Henrys Lake Surveys Show Fishery Improving

Gillnetting--Each year we use gill nets before the fishing season opens to monitor the population in Henrys Lake. In 2005 the news was mostly good. We found above average catches of two and three-year old Yellowstone cutthroat trout, indicating the overall fish numbers in the lake are on the rise. Utah chubs, which were first found in nets in 1993, continue to be found in low abundance (5.5 fish per net) when compared to other waterbodies such as Island Park Reservoir (35 chubs per net) or Hebgen Lake, MT (25 chubs per net).

Creel Survey--Results from our 2005 creel survey show the fishing was much improved over 2003 and 2004. On average, anglers caught a fish every 2 hours, for a catch rate of 0.5 fish/rod hour. This is a big improvement over 2003, when the average was 0.16 fish per hour. Equally as exciting was the abundance of large hybrids in the catch. Approximately 1,200 hybrids over eight pounds (many exceeding 10 pounds) were caught (not all harvested) in 2005. After stocking resumed in 2002, brook trout are once again showing up in the catch, with anglers landing approximately 1,250 fish averaging 15 inches. Throughout the season, anglers spent about 95,000 hours fishing Henrys, and caught 45,000 fish. About 80% of all fish landed were released, with an estimated harvest of 9,000 fish.

Spawning--The 2005 spawn started on February 14th and continued until May 9th. In all, IDFG personnel and volunteers spawned over 1,000 females and collected over 2.37 million eggs. We produced 331,000 hybrid trout eggs and 1.27

million Yellowstone cutthroat trout eggs. The sterilization program on hybrid trout resulted in 100% sterilization this year. We acquired sterile brook trout eggs, which are being raised at the Ashton Hatchery for release later this year.

Habitat Work--We also continued habitat work in 2005. We were part of a large-scale cooperative effort to remove culverts on Targhee and Howard Creek, which were barriers to fish migration. These culverts were replaced with open bottom bridges, which will increase the access to several miles of tributary spawning habitat for cutthroat trout. Additionally, over ten miles of fence were maintained as part of a program to protect water quality in the tributaries used by spawning fish. New fence was constructed adjacent to the County Park. Most of the labor for the project was volunteer labor from a Rexburg Boy Scout group -- many thanks to the Scouts!



IDFG personnel and volunteers collected over 2.3 million eggs from Henrys Lake cutthroat in 2005.

South Fork Cutthroat Conservation

Management in the South Fork Snake River is centered on restoration and maintenance of the world-famous Yellowstone cutthroat fishery. The South Fork gained fame for its high catch rates and the aggressive cutthroat trout's willingness to take dry flies. Unfortunately, recent years have seen a decrease in the cutthroat population corresponding with an increasing rainbow population. This raised concerns that in addition to the risk of losing a unique native fishery, a potential consequence of a shift to a rainbow trout dominated fishery was a decline in catch rates. IDFG has led a collaborative effort to conserve native Yellowstone cutthroat trout in the South Fork by: 1) Encouraging anglers to harvest rainbow and hybrid trout while reducing harvest of cutthroat trout, 2) Manipulating flows in the main river to the detriment of rainbow and hybrid trout but to the benefit of cutthroat trout, and 3) Controlling hybridization in critical cutthroat trout spawning tributaries with the use of fish weirs. The 2005 survey work indicates the efforts are beginning to pay off.



South Fork Creel Survey

In 2004, anglers saw significant regulation changes for the South Fork including a year-round season, catch-and-release for cutthroat trout, and no limits for rainbow and hybrid trout. We conducted a creel survey in 2005 to assess the impacts of these regulation changes and compare results to a creel survey conducted in 2003.

From January to December, 2005, we contacted 3,542 anglers on the river and asked questions like how long they had been fishing and how many fish they had caught. We also flew the entire river 137 times to count the number of anglers. Of the interviewed anglers, 29% were non-residents and 71% were residents. About half of the non-residents were guided compared to less than 2% of the residents. Overall, 16% of South Fork anglers were guided. As expected, most anglers fished with flies (68%) or from a drift or power boat (81%). Only 19% fished from the bank, 17% fished with bait, and 14% fished with lures.

From 2003 to 2005, the overall catch rate improved from 0.69 to 0.84 fish per hour. Catch rate by species were 0.29 for cutthroat trout, 0.11 for rainbow trout, 0.28 for brown trout, and 0.16 for whitefish. Total effort was 233,009 hours. The 7% increase over 2003 was largely the result of the new winter and spring season. About half of the pressure occurred during weekends and the other half during weekdays. Total catch was approximately 196,339 fish—a 31% increase over 2003. Anglers released 95% of the fish they caught, but harvested an estimated 6,718 rainbow trout. This was a 33% increase from the 5,070 harvested in 2003. Rainbow trout exploitation (the estimated percentage of the population that was harvested) increased from 12% to 21%. Unfortunately, three out of four rainbows that anglers caught were released in both years, slowing the cutthroat recovery effort.



*Anglers caught
0.84 fish/hour
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from 0.69 fish/
hour in 2003.*

South Fork Flow Management

Flows in the South Fork influence everything from insect and fish production to cottonwood regeneration. Recent research with Idaho State University (ISU) has shown flows strongly influence reproductive success of both rainbow and cutthroat trout. To favor cutthroat trout and discourage rainbow trout, the studies showed the peak flow in the spring should be 15 or more times higher than the base flow in the previous winter. High and sharp runoff peaks, similar to a free flowing river are also needed.

As part of a cooperative effort, the Bureau of Reclamation (who operate Palisades Dam) increased spring flows to a peak of 18,960 cfs on May 23, 2004, and 14,900 cfs on June 15, 2005. Both freshets were successful in producing maximum to minimum flow ratios exceeding 15. Because reproductive success can't effectively be measured for one and a half years (until juvenile fish are large enough to be sampled by electrofishing) not until October 2005 were we able to see the effects of the 2004 flows. The results suggest the 2004 freshet was very successful in reversing both the invasion of rainbow trout and the steady decline of cutthroat trout that has been occurring since the mid-1980s.



The 2004 spring flows from Palisades Dam appear to have improved the juvenile cutthroat to rainbow trout ratio.

Tributary Weir Trapping

Both cutthroat and rainbow trout spawn in the main South Fork and its tributaries. However, research has shown most cutthroat trout spawn in the tributaries whereas the majority of rainbow trout spawn in the main river. Restricting rainbow spawning in tributaries is one way of insuring genetic purity of the cutthroat trout population. Between 1998 and 2001 fish trapping and collection facilities were installed Palisades, Rainey, Pine, and Burns creeks.

Every day from April through June, fisheries personnel tend the traps. Cutthroat are passed upstream, while rainbow trout are moved to the Trail Creek Pond near Victor.

In 2005 we caught 4,254 trout of which 341 were rainbow and 3,913 were cutthroat. For each weir and all the weirs combined, these are the most fish that have been caught since the beginning of

the program. As in years past, few fish were trapped at Rainey Creek due to irrigation dewatering and passage problems between the main river and the weir.



Fish traps (weirs) like this one on Palisades Creek allow fisheries staff to collect trout on spawning migrations from the South Fork.

Nearly 4,000 cutthroat were passed upstream in Pine and Palisades creeks in 2005.

Population Survey Results

Every October since 1986 the three-mile long "Conant reach" of the South Fork near Swan Valley is electrofished to gather trout population information. The 2005 survey results were encouraging. The number of cutthroat trout was estimated to be 1,061 fish per mile, a 37% increase from the previous year and the first increase seen since 2000. Though increasing, it is still less than half of the 20-year average of 2,306 per mile. Quality Stock Density (QSD) reflects the percentage of large fish (over 16") in the fishery (those over 8"). The cutthroat QSD had declined to a low of 2% in 2001, but following new catch-and-release rules the QSD improved to 14% in 2005, indicating a big improvement in the number of quality-size fish.

Equally encouraging was the trend in the rainbow and hybrid population which, for the second year in a row, decreased in the Conant reach. There were an estimated 678 fish per mile – less than half of the historical high of 1,501 per mile recorded in 2003. The brown trout population continues to be relatively stable at 333 fish per mile. Their 20-year average was 508 per mile.

The three-mile long Lorenzo reach, located in the lower South Fork near Rigby, was also electrofished in September, 2005, as it has been intermittently since 1987. The brown trout population continues to do well in the lower river. Though it decreased slightly from the previous year to 1,242 fish per mile, it was still higher than

the long term average of 985 per mile – and about four times higher than the Conant number.

Cutthroat were estimated at 122 fish per mile. This is a 68% decline from the previous year and about a fifth of the long-term average of 521 per mile. Very few rainbow and hybrid trout are found in the lower South Fork. As usual, they were 1% or less of the total electrofishing catch.

The cutthroat population was up 37% from 2004 in the Conant Reach, while rainbows were down 55% from 2003.

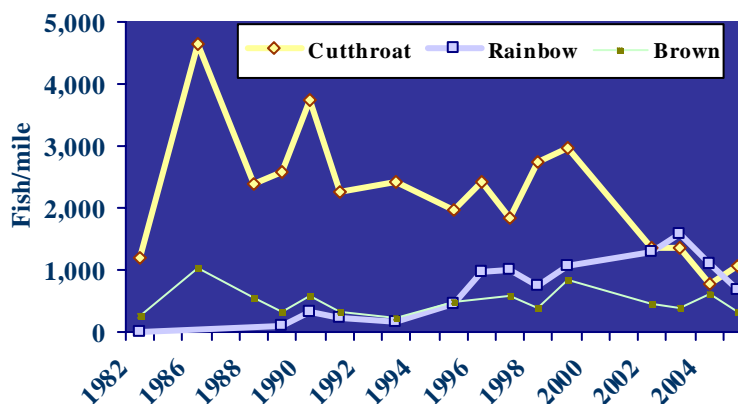


Figure 1. Density of cutthroat, rainbow (including hybrids) and brown trout in the "Conant Electrofishing Reach" of the South Fork of the Snake River in October, 2005.

Mountain Whitefish Studied in the Big Lost River

Recently collected evidence suggests the mountain whitefish population in the Big Lost River is genetically unique—a result of thousands of years of population isolation. The population has declined in recent years, largely because of effects of the recent drought. IDFG is working with the U.S. Forest service, Trout Unlimited, and water users to rebuild the existing population. Because surprisingly little is known about this common species, we have been gathering as much life-history information as possible to aid in restoration efforts.

In 2005 we used egg mats to collect whitefish eggs, and documented spawning activity from mid-October through mid-November. This is encouraging because it definitively demonstrates the population is indeed spawning. We have aged several whitefish in other areas, and found them to live as long as 17 years. We also used radio-tags to track fish and learn more about their movements and habitat use. Data collected from radio-telemetry work showed complex movement patterns of adult fish.



IDFG and USFS biologists look for whitefish eggs on an artificial substrate mat in the Big Lost River. The newly developed technique not only confirmed whitefish spawning, but helped identify when and where.

Henrys Fork Population Surveys

Every spring, we sample portions of the Henrys Fork to monitor trout populations. The Box Canyon is assessed nearly every year, and one or two other sites are sampled on an intermittent basis. In the Box Canyon we estimated 1,926 rainbow trout per mile. This is an 18% increase over the 1,633 trout per mile found in 2003. Winter flows have a strong influence on trout recruitment in the Henrys Fork, with higher flows producing strong year classes of trout. Flows during the early 2000's were well below average as a result of the drought, and resulted in the production of two weak year classes of trout. The higher winter flows from the 04-05 winter (215 cfs) likely contributed to the increased number of juveniles we found in 2005. Likewise, flows from the 05-06 winter (346 cfs) should help trout recruitment in coming years. We will repeat this sample in 2006.

The second area sampled was downstream at the "Vernon Reach" (from Vernon Bridge to Chester backwater, where we found 1,185 rainbow trout and 126 brown trout per mile. Interestingly, 85% of the fish we collected were greater than 16 inches. This is good news for anglers looking for big fish; however, the low numbers of juvenile fish may indicate a problem for the population in coming years. Future research will focus on recruitment in the river reach below Ashton Dam.

IDFG worked with the Henrys Fork Foundation to host an informational meeting and discuss the potential drawbacks and benefits of supplementing the Box Canyon and Harriman Ranch fisheries with hatchery fish. Participants all found the meeting very informative and beneficial. For a summary of the meeting, contact the fisheries staff at the Regional Office.



Eighty-five percent of the fish sampled in the Vernon Reach in 2005 were over 16".

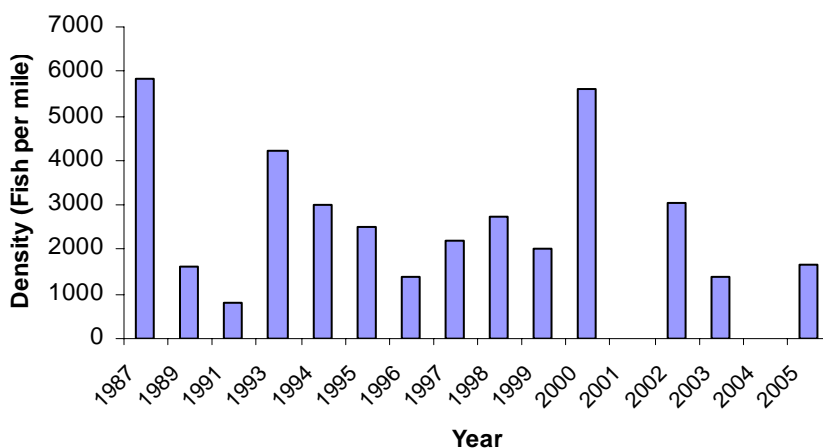


Figure 2. Density of rainbow trout based on electrofishing in the Box Canyon reach of the Henrys Fork in May, 2005.

Island Park Reservoir Still Suffering from Drought

Every couple of years we sample Island Park Reservoir with gill nets to assess the status of the fishery. Though most of the regions fisheries suffer during droughts, Island Park Reservoir is one of the hardest hit. In recent years we've seen a clear relationship between winter reservoir storage and fish abundance. Higher winter pools mean greater trout survival through the winter. The combination of reservoir drawdown and the abundance of chubs and suckers greatly limit trout and kokanee production. In May, 2005 we collected 408 fish with seven gill nets. Utah chubs and Utah suckers made up 86% of our total catch. We also collected 52 rainbow trout, one cutthroat trout and one brook trout. We are currently evaluating potential management actions to improve the trout fishery. In the

coming year, we will be measuring forage availability and condition of trout to see if increased stocking levels will benefit the fishery. We will also compare the performance of diploid and triploid rainbow trout fingerlings to determine if the shift to triploid fingerlings in 2003 has contributed to poor survival.

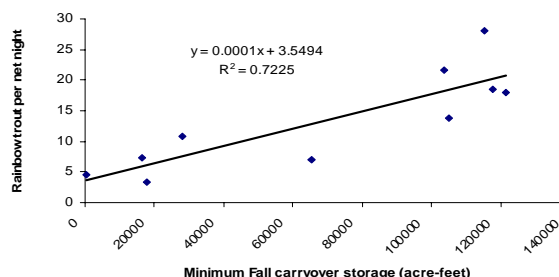


Figure 3. Relationship between the rainbow trout population as indexed by gillnet catch in Island Park Reservoir and the previous year's carryover.

Teton River Trout Population Depressed, but Improving

The trout population in the Teton River is regularly monitored by electrofishing. Two reaches near Driggs have been surveyed periodically since 1987. The 2005 combined survey results were a mix of good news and bad news. We estimated 44 cutthroat trout per mile. Though this is only about a fourth of the 19-year average of 191 per mile, it was a four-fold increase from the record low 2003 estimate of 10 per mile. The increase was the result of some much needed juvenile recruitment, which has suffered in recent years from the drought.



Fisheries personnel electrofishing in the upper Teton River in September, 2005.

The rainbow and hybrid population also improved to an estimated 517 fish per mile. This is the second highest number on record and double the long term average of 264 per mile. We estimated there were 242 brook trout per mile – which is the highest on record and 35% more than the long term average of 179 per mile.

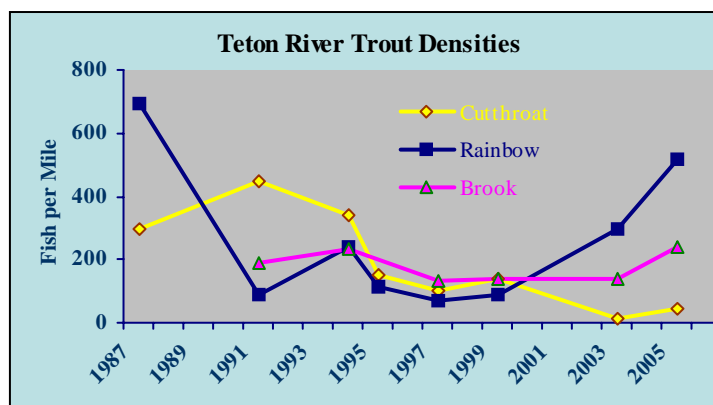


Figure 4. Density of cutthroat, rainbow (including hybrids) and brook trout in the upper Teton River in September, 2005.

Trout Populations in Small Streams Surveyed

Though the status of trout populations in the large rivers of the region is fairly well-known, there are hundreds of miles of small streams in the region that also contain important populations. In recent years, the IDFG has been cooperating with the U.S. Forest Service, Henrys Fork Foundation, and Friends of the Teton River to learn more about the distribution and abundance of trout, particularly Yellowstone cutthroats, in these smaller systems. In 2005 we surveyed 88 stream locations in the Henrys Fork, Beaver/Camas and Medicine Lodge drainages. Thirty-

five percent of our randomly-chosen survey locations were dry as a result of the ongoing drought. Of the reaches with water, 26% were fishless, 6% had no trout, but other non-game fish, 46% contained only nonnative brook trout, 9% had native Yellowstone cutthroat trout in combination with other species, and 15% had only native Yellowstone cutthroat trout. We will use this information in coming years to identify candidate streams we can manage for native species.

A Fisheries Research crew uses a backpack electrofisher to collect trout in a small stream.



Anglers Enjoying Ririe Reservoir Kokanee

In 2002, IDFG increased the kokanee plant in Ririe Reservoir from 70 thousand to 200 thousand fry. The goal is to improve catch rates and provide a high-yield fishery close to Idaho Falls. We completed a creel survey on Ririe Reservoir to assess the 2005 fishery. We saw an increase in effort over 2003, primarily due to an ice fishery that didn't occur in 2003. Catch rates increased from 0.65 fish per hour in 2003 to 0.83 fish per hour in 2005. Catch rates for kokanee were 0.35 fish/hour—up from 0.06 fish/hour in 2003. Anglers harvested 9,200 kokanee in 2005 compared to 1,100 in 2003. Kokanee, small-

mouth bass and cutthroat trout made up 78% of anglers catch.



Anglers enjoyed a cold but productive kokanee ice fishing clinic on Ririe Reservoir in February.

Anglers caught 0.35 kokanee per hour in 2005, up from 0.06 kokanee per hour in 2003.

Kids listen to an IDFG demonstration on electrofishing and the importance of habitat.



Clinics Teach Kids About Fishing

IDFG biologists and volunteers conducted several fishing clinics during 2005 to help youth and beginner anglers hone their skills. We held a kokanee fishing clinic on Ririe Reservoir in February, and we also conducted three free "fishing for beginners" classes through the summer. All events were well attended, and many young anglers caught their first fish ever. In June, we hosted several Free Fishing Day events on local waters, including a new event in Idaho Falls at Freeman Park that we held with the Idaho Falls Elks Club.



2006 Brings Regulation Changes

Idaho fishing regulations are modified every two years. The rules are based on biological information combined with public input. The biological information is the result of dozens of surveys and studies like those outlined on previous pages. We make every effort to pass this information on to the interested public through newspaper articles, TV and radio stories, webpage updates and public meetings. As we formulate regulation proposals, we invite public input through open houses, public meetings, phone calls, e-mails, or simply stopping by our office to talk about fisheries issues. Although it is impossible to obtain comments from everyone who fishes in Idaho, we believe the comments are representative of public sentiment. After gathering public comment, we present the proposals to the Fish and Game Commission, where, if approved, the proposals become law. The Commission has approved the following regulation changes for the Upper Snake Region in 2006:

Henrys Lake –

- Removal of the 5am to 9pm fishing hours. Anglers can now fish 24 hours per day.
- Extend the fishing season until the end of November. Season now runs from the Saturday of Memorial day weekend until November 30.

Big Lost River –

- Catch and release fishing only for mountain whitefish. All mountain whitefish caught must be immediately released unharmed.

Teton River –

- Catch and release fishing on cutthroat trout. All cutthroat trout caught must be immediately released unharmed.

Thanks to all of our Partners!

We hope you will agree that 2005 marked significant progress in conserving our unique and important fisheries in the Upper Snake Region throughout this past year. None of the accomplishments, however, came without the hard work and cooperation of the many groups, agencies, and individuals who support and assist the IDFG fisheries program. We sincerely appreciate the efforts of the Henrys Fork Foundation, Trout Unlimited, Snake River Cutthroats, Friends of the Teton River, the U.S. Forest Service, the Bureau of Reclamation, Upper Snake Fly Fishers, Henrys Lake Foundation, Greater Yellowstone Coalition, Teton Regional Land Trust, U.S. Fish and Wildlife Service, Rob Van Kirk, the Big Lost Irrigation District, Fremont-Madison Irrigation District, Idaho Falls Elks Club, and the Island Park Sportsmen's Association.